Region 8 AdHoc Committee on New Student Contests

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Goals

The IEEE Region 8 AdHoc Committee on New Student Contests has been tasked with identifying and developing new ideas for student contests in Region 8. The goals of the programme are as follows:

- Provide an activity for student members, which inspires learning, collaboration, the development of new skills and fosters technological innovation.
- Develop valuable experience which will enhance the job prospects of the participants, help to spread awareness of the importance of engineering skills and the positive impact that new technologies and engineers have on society.
- Enhances IEEE Student membership across Region 8 to ensure sustainability of student communities.

Progress against goals

The following has been decided amongst the committee membership:

- The new student contest will provide student members who are innovators, makers, and developers across the region an opportunity to take part in a hardware design and build competition, using Arduino. Students can gain valuable experience with open-source, low-tech, and inexpensive hardware solutions which are easy to learn, develop team-working skills after months of social distancing and win great prizes for both winning and participating.
- The contest has the working title of 'IEEEduino Challenge', while this may change at a later date.
- Student members are invited enter the contest, either alone or in teams of up to three, which will be delivered in two phases:
    - **The design and ideas phase**, where students will plan, design, simulate and justify their proposal.
    - From the submitted ideas, 30 submissions will be selected to participate in the build phase.
    - **The build phase**, where selected participants will receive an Arduino Nano microcontroller, funded by Region 8, to develop their idea. Students may build their design at home, or may use their university laboratories to extend the hardware using passive and active components on a breadboard.
    - The final entries will be judged via a video submission, where the device is demonstrated and explained. A high-resolution photograph of the entry and a copy of the code will also be required for judging.
- The theme will vary each year, with the 2021 theme being humanitarian technologies to combat COVID-19.
    - Applications are invited which aim to help in tackling and recovering from the COVID-19 pandemic.
    - Example projects include carrier robots, personal distance or temperature monitors, touch-less displays, communication, disinfectors and sanitation, home-automation, usage counters, occupancy displays…
    - Future themes could include AI, Embedded ML or Tiny ML, Smart Cities…
- The first iteration will consist of a pilot programme, in a number of Region 8 sections which show interest in participating and have volunteer ambassadors. Future programmes will be opened to all of IEEE Region 8.
- Advertising and publicity will be by the following means:
    - Social media outreach to student members (IEEE R8 SAC, Section SAC, Society partner pages).
    - E-Notice advertising to all sections to gauge interest in pilot programme
    - Stand-alone website to be designed, linking to OpenWater submission portal. Example projects listed.
    - Ambassadors programme to be piloted, where a representative is recruited in each participating section to spread awareness and provide feedback. Ambassadors will be issued with promotional packs.
- The timeline is expected to follow the following:
    - Approval by IEEE Region 8, preparation and logistics, advertising, website build – **Q2 2021**
    - Recruitment and training of ambassadors – July 2021.
    - **Design and ideas phase** submissions to open in August 2021.
    - Judging of design and ideas phase – September 2021.
    - Issuing of Arduino Nano hardware, **build phase** – November 2021.
    - Judging and award announcement – December 2021.

- Sponsors and Partners
    - Industrial sponsors and partners are sought, in order to secure additional funding for the contest, to provide an essential link to industry and career opportunities within it, and to raise the profile of the activity.
    - The career opportunities available via the industrial partnerships will be highlighted throughout the event.
    - The New Initiatives *Careers* and *Industrial* ad-hoc teams will be consulted for collaboration.
- Prizes
    - The award prizes for this contest are to be in-keeping with other society-level activities across IEEE.
    - $300 First place, $200 second place and $100 third place cash rewards
    - Certificate of participation for all other participants, to be delivered in hard-copy.
- Budget Requested
    - The budget to host this contest is expected to be under €3000, consisting of the following:

Item	Qty	Cost	Cost (EUR)
Arduino Nano Development Board	35	£551.46	650
Electronics Breadboard Kit	35	£454.65	530
Postage of units internationally	33	£330	385
Award Certificates and Presentation Folders	30	£60	70
Promotional Packs for Ambassadors	15	£400	460
Cash Prizes	3	$600	500
TOTAL			2595

- Judging and Criteria
    - Hardware to be provided to judges for familiarization and testing of code if necessary.
    - Seek judges from society membership (CAS, Computer...); Serving judges in IEEEmadC, IEEEXtreme if skills align
    - Supply of hardware to participants is proposed specifically to eliminate the possibility of those with greater financial means acquiring an advantage. Judging scheme will be designed to reject bias towards abundant hardware availability and focus on ideas and implementation.
    - Draft judging criteria is proposed as follows:

Judging Criteria	Weight (%)
Design and Research Process	25
Assembly Process	25
Innovation & Creativity	25
Practicality and Usefulness of Idea	25

- Key Performance Indicators
    - Registrations of Interest to the contest (Initial phase) – Target: 50 registrations
    - Submitted ideas to the contest – Target: 40 submissions
    - Completed entries – Target: 25
    - Non IEEE members recruited – Target 25% of entries.
- Team Announcement – Team will be expanded as project develops and as required
    - George Michael (Cyprus)
    - Rawan El-Jamal (Lebanon)
    - Mohammad Hossein (Portugal)
    - Davide Morgado (Portugal)
    - Simay Akar (Turkey)